

What is Claimed is:

1. An electrodeless fluorescent lamp, comprising:

a glass vessel having a retention channel and a vapor chamber for sealedly storing an active vapor therein;

5 a thermal conductive unit disposed within said retention channel;

an induction coil supported by said thermal conductive unit within said retention channel, wherein said induction coil is arranged to generate heat towards said vapor chamber for emitting light from said active vapor; and

10 a ventilation arrangement having a ventilation channel enclosed by said glass vessel to extend from said retention channel to an exterior of said glass vessel for ventilating excess heat from said induction coil within said retention channel to outside of said glass vessel.

15 2. The electrodeless fluorescent lamp, as recited in claim 1, wherein said ventilation channel is longitudinally and downwardly extended from said retention channel to an outside of said glass vessel through a bottom end of said ventilation channel.

20 3. The electrodeless fluorescent lamp, as recited in claim 2, wherein said ventilation arrangement further comprises a heat ventilating heat reservoir provided at a bottom end portion of said ventilating channel wherein heat from said induction coil is arranged to be transferred to said ventilating heat reservoir which facilitates enhanced heat transfer between said ventilation channel and an outside of said glass vessel.

4. The electrodeless fluorescent lamp, as recited in claim 3, wherein said ventilating heat reservoir is a heat sink which is capable of facilitating said enhanced heat transfer between said ventilation channel and an outside of said glass vessel.

25 5. The electrodeless fluorescent lamp, as recited in claim 1, wherein said ventilation channel is formed and longitudinally extended along said thermal conductive

unit which also extends to reach an outside of said glass vessel through a bottom end of said retention channel.

6. The electrodeless fluorescent lamp, as recited in claim 3, wherein said ventilation channel is formed and longitudinally extended along said thermal conductive unit which also extends to reach an outside of said glass vessel through a bottom end of said retention channel.

7. The electrodeless fluorescent lamp, as recited in claim 4, wherein said ventilation channel is formed and longitudinally extended along said thermal conductive unit which also extends to reach an outside of said glass vessel through a bottom end of said retention channel.

8. The electrodeless fluorescent lamp, as recited in claim 5, further comprising a ferrite conductor supported by said thermal conductive unit and contacted with said induction coil, wherein said ferrite conductor is adapted to facilitate high-frequency energy transfers between said thermal conductive unit and said induction coil.

9. The electrodeless fluorescent lamp, as recited in claim 6, further comprising a ferrite conductor supported by said thermal conductive unit and contacted with said induction coil, wherein said ferrite conductor is adapted to facilitate high-frequency energy transfers between said thermal conductive unit and said induction coil.

10. The electrodeless fluorescent lamp, as recited in claim 7, further comprising a ferrite conductor supported by said thermal conductive unit and contacted with said induction coil, wherein said ferrite conductor is adapted to facilitate high-frequency energy transfers between said thermal conductive unit and said induction coil.

11. The electrodeless fluorescent lamp, as recited in claim 7, further comprising a supporting base mounted at a bottom portion of said glass vessel wherein said ventilation arrangement further contains a plurality of convecting holes formed on said supporting base and said thermal conductive unit such that air from said ventilation channel is adapted to pass through said convecting holes to reach an exterior of said glass vessel.

12. The electrodeless fluorescent lamp, as recited in claim 11, further comprising a ferrite conductor supported by said thermal conductive unit and contacted with said induction coil, wherein said ferrite conductor is adapted to facilitate high-frequency energy transfers between said thermal conductive unit and said induction coil.

5 13. The electrodeless fluorescent lamp, as recited in claim 7, wherein said ventilation channel is also upwardly and longitudinally extended to reach an outside of said glass vessel through an upper end of said glass vessel.

10 14. The electrodeless fluorescent lamp, as recited in claim 13, further comprising a ferrite conductor supported by said thermal conductive unit and contacted with said induction coil, wherein said ferrite conductor is adapted to facilitate high-frequency energy transfers between said thermal conductive unit and said induction coil.

15 15. The electrodeless fluorescent lamp, as recited in claim 7, wherein said ventilation arrangement further contains a plurality of transverse ventilation channels transversely extended along said glass vessel from said induction coil to an outside of said glass vessel so as to provide enhanced heat ventilation through said transverse ventilation channels.

20 16. The electrodeless fluorescent lamp, as recited in claim 15, further comprising a ferrite conductor supported by said thermal conductive unit and contacted with said induction coil, wherein said ferrite conductor is adapted to facilitate high-frequency energy transfers between said thermal conductive unit and said induction coil.

25 17. The electrodeless fluorescent lamp, as recited in claim 7, wherein said ventilation channel is longitudinally and upwardly extended from said retention channel to an outside of said glass vessel through an upper end of said glass vessel, wherein said ventilation arrangement further comprises one more heat ventilating base mounted on a top portion of said ventilation channel for removing heat from said induction coil and said ferrite conductor.

30 18. The electrodeless fluorescent lamp, as recited in claim 17, wherein said ventilation channel is formed in said thermal conductive unit which is also upwardly and longitudinally extended to reach said additional heat ventilating base through said upper end of said glass vessel.

19. The electrodeless fluorescent lamp, as recited in claim 17, further comprising a ferrite conductor supported by said thermal conductive unit and contacted with said induction coil, wherein said ferrite conductor is adapted to facilitate high-frequency energy transfers between said thermal conductive unit and said induction coil.

5        20. The electrodeless fluorescent lamp, as recited in claim 18, further comprising a ferrite conductor supported by said thermal conductive unit and contacted with said induction coil, wherein said ferrite conductor is adapted to facilitate high-frequency energy transfers between said thermal conductive unit and said induction coil.

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